

## Engineering Division Policy

### Performing Quality Reviews of AE Designed Military Projects

The purpose of this memorandum is to establish procedures that will aid Engineering Division in executing its responsibility to ensure design quality of AE designed Military projects. The procedures address the following:

- a. Quality Assurance Review of AE's design,
- b. Approving/Disapproving AE's design,
- c. Coordination between Engineering Division, PM, Construction Division and the customer.

#### 1. Design Submittals:

Engineering Division shall require design submittals for the purpose of conducting Quality Assurance Reviews at the Project Definition (10%) phase, 60% Design phase, and Final Design phase. Military customers may require concurrent reviews at any or all of these design phases. When military customers require a concurrent review, the time for the review will be extended to allow the AE to consider and incorporate customer comments.

#### 2. Design Phase:

- a. *Quality Assurance Review of AE Design.*

The Quality Assurance Review consists of two parts; 1) review of the AE's documentation of compliance with the AE's Quality Control Plan, and 2) review of the AE's design documents.

- 1). District Review of AE's documentation of compliance with their Quality Control Plan.

Each reviewer along with the TM shall review documentation submitted by the AE to show compliance with the AE's Quality Control Plan. Documentation shall include:

- Names of AE's designers, design checkers, and design reviewers;
- Dates, participants, and results of all design checks and reviews; and
- Signed statements by the AE's reviewer in each discipline that the design has been reviewed for accuracy, adequacy, conformance to criteria, and content for the particular phase of the design.

- 2). District Review of AE Design Documents.

a). Objective of Review. Each reviewer shall perform a review of that portion of the AE's design pertaining to the reviewer's discipline. The intent of this review is to determine if the design is sufficiently complete and technically adequate for the particular phase of the design. If the design is not

sufficiently complete or not technically adequate or, if there are insufficient calculations or details to determine technical adequacy, then the reviewer shall recommend that the design be disapproved.

b). Level of Review. The level of review by each reviewer is dependent on the particular job being reviewed. Reviewers must use their own judgment to determine what level of review will meet the objective of the review stated in the above paragraph. If an initial, general review reveals possible inadequacies in the design, the reviewer must perform a more intense review of the questionable areas to determine if there is a problem in the design. The reviewer's review must be consistent with the objective stated in the above paragraph. At no time will the reviewer attempt to redesign the project.

*b. Approving / Disapproving AE's Design.*

1). Per paragraph 2.a.2).a). above, the reviewer's responsibility is to recommend approval or disapproval of that portion of the AE's design that pertains to the reviewer's discipline. Upon completion of the Quality Assurance Review and after considering Construction Division's BCOE comments, the reviewer will complete the middle portion of the form at Enclosure 1 and submit it to their supervisor. If the reviewer's recommendation is to disapprove the design, the supervisor must validate the reviewer's concerns by conducting their own review or by delegating a second review to another expert within or outside of the supervisor's section.

2). Upon completion of the supervisor's review, the supervisor shall decide whether to approve or disapprove the design. The supervisor shall document their decision on the middle portion of the form at Enclosure 1 and submit it to the Project Architect/Project Engineer (PA/PE). If the design is disapproved, the PA/PE shall complete the lower portion of the form and submit to the Chief of the lead Branch with copies to Programs and Project Management Division (MD-M) and either Air Force (ED-DR) or Army Section (ED-DS) in Design Branch.

*c. Coordination between Engineering Division, PPM, and the Customer.*

1). Upon notification of a disapproved AE design, the Chief or Assistant Chief of the lead Branch shall call a meeting of the reviewer, reviewer's supervisor, Technical Manager, PA/PE and Project Manager to determine a course of action to correct the problem. Possible courses of action include a resubmittal of part or all of the design documents, an on board review of the design documents by some or all of the reviewers, supplementing the AE with in-house or other contract AE manpower, or termination of the AE contract. As a minimum, resubmittal of the deficient portion of the design shall be required as soon as possible prior to the next regularly scheduled submittal. Time for resubmittal will be determined at the meeting.

2). The TM shall notify the AE's project manager by letter and phone call of the selected course of action. If warranted, Engineering Division's COR, or Chief of Engineering Division shall also contact the AE's principal in charge of the project by letter and phone call.

3). The Project Manager shall be responsible for notifying the customer, especially if the selected course of action impacts costs and/or schedule.

**3. Advertisement Phase:***a. AE Design Reviewers.*

AE design reviewers shall conduct their reviews of the Ready to Advertise set and all subsequent amendments the same as described in paragraph 2.a.2).a). above. Reviewers shall again evaluate and consider Construction Division's BCOE comments in their recommendation to approve / disapprove the design.

*b. During the Advertisement Phase.*

The TM shall initiate the "Approval to Open Bids" form (see Enclosure 2). This form, which is required by ER415-1-11, is used to verify that:

"All final design, biddability, constructibility, operability, and environmental reviews have been completed. Comments have been incorporated into the bidding documents as considered appropriate. There are no known modifications. Subject project has been advertised with bid opening scheduled for...."

Responsible individuals signing this document are the Chief of Design Branch, Chief of Engineering Division, Chief of Construction Division and the Engineering Division TM. Concurrence by the Engineering Division individuals is dependent on their staff's approval of the design documents. The TM shall confirm this approval by collecting the completed forms at Enclosure 1 for each discipline.

**4. Construction Phase - AE Prepared Modifications:**

The TM shall route all AE prepared modifications through the technical sections of Design Branch and Geotechnical Branch as appropriate to allow for a Quality Assurance review of the proposed changes and provide funds for review equaling one (1) hour per discipline. The Design Branch Mod Coordinator shall assure that this review is coordinated through the technical sections. If the proposed modification is technically adequate, the Mod Coordinator shall forward to CADD Section for final reproduction. If technical problems are discovered by this Quality Assurance review, the reviewer shall contact the TM and either request additional funds and additional time to review the submittal or return the documents to the TM so they can be given back to the AE for revisions. The TM shall notify both the PM and Construction Division if the additional time and/or funds are required by the AE.